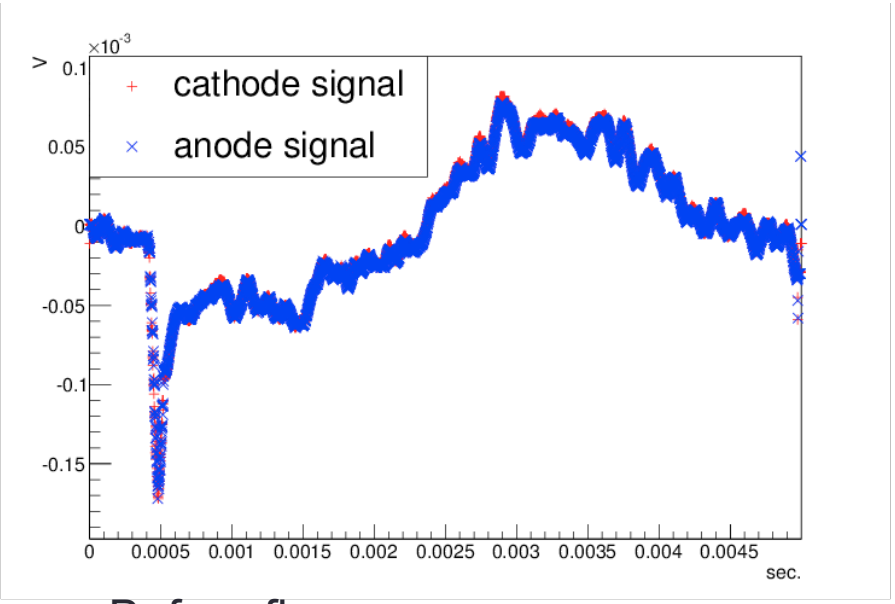
PURITY MONITORS

PrMs have had several issues

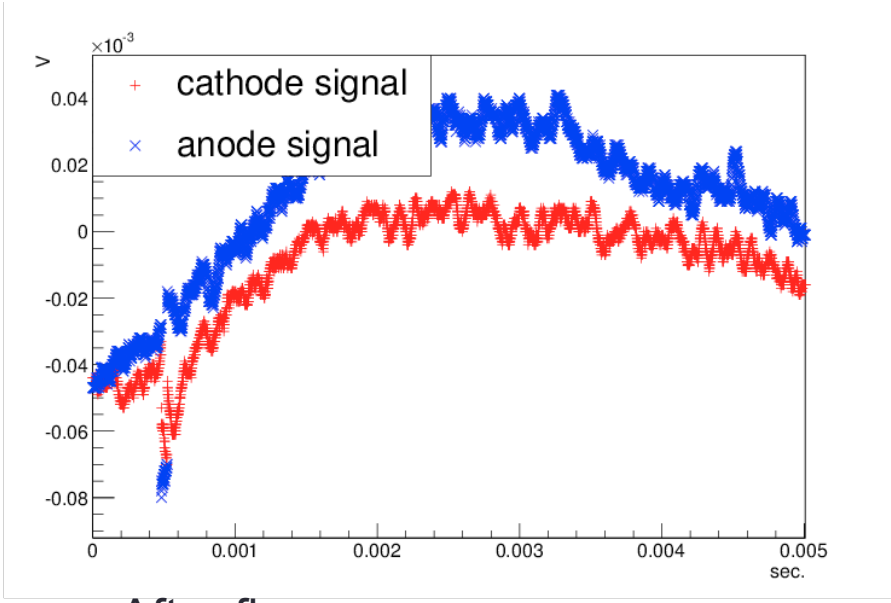
- A few new issues have presented themselves since the timeouts have been fixed
- An issue showed up last week where the anode and cathode traces looked identical (has been fixed)
- Another issue has been more longstanding, the signals from the PrMs have been really small (also fixed now)
- Walt and I also lowered the voltages for PrMs 1 and 4 yesterday, taking them down by 30% (previously at V_c = 150 V and V_a = 3 kV, now at V_c = 105 V and V_a = 2.1 kV)

Identical traces

- A week ago, several of the anode and cathode signal traces looked identical
- Turned out we were taking an invalid number of samples per run (5,000), needs to be a factor of 16 (now using 5,008), wrong number puts the board into a funny state



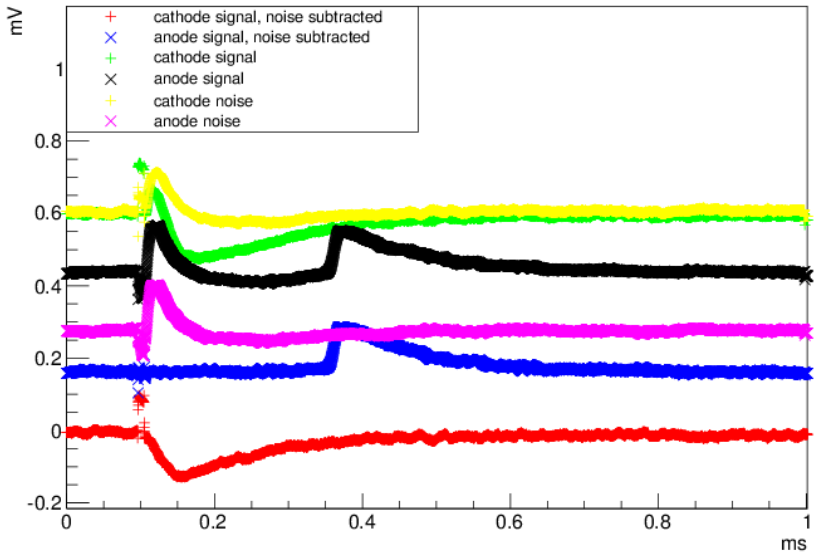
Before fix



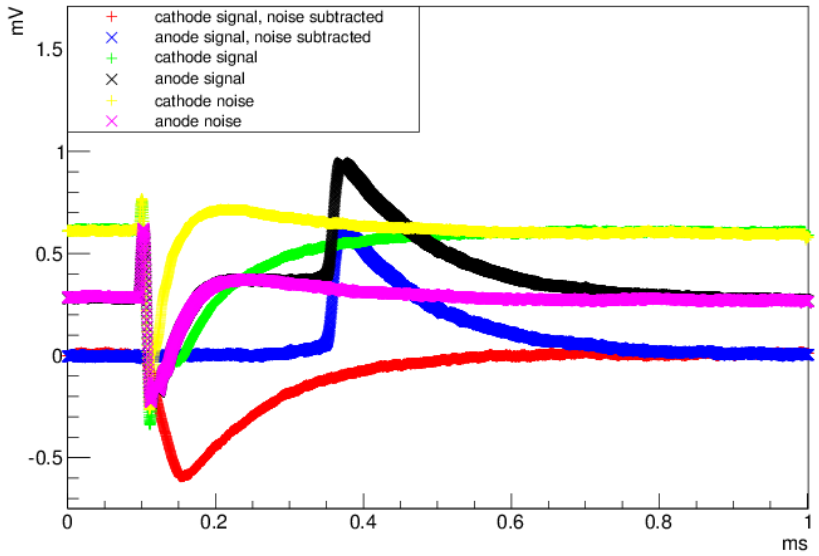
After fix

Small signals

- Another issue has been apparent from the start, the signals have been really small, around 100 microvolts or less when we expect them to be around 10 millivolts



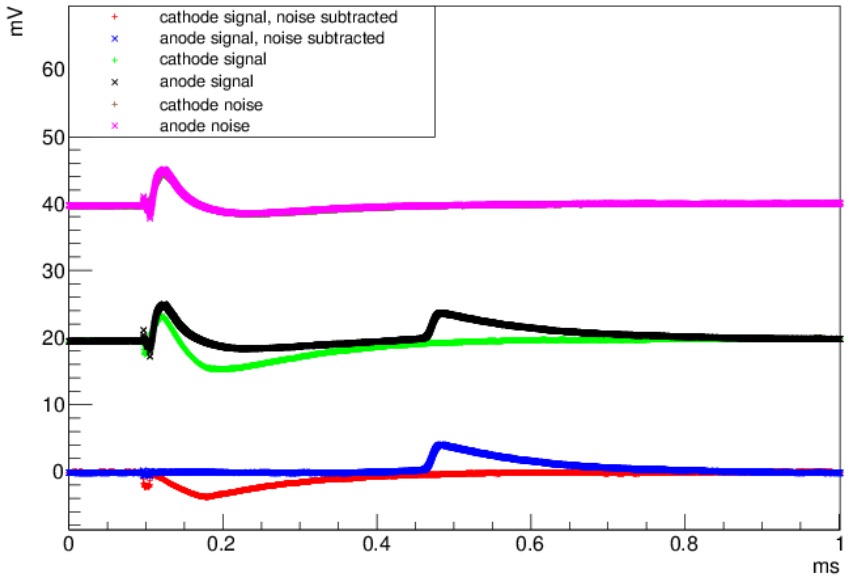
PrM 1, run 2360, 1.2 ms lifetime



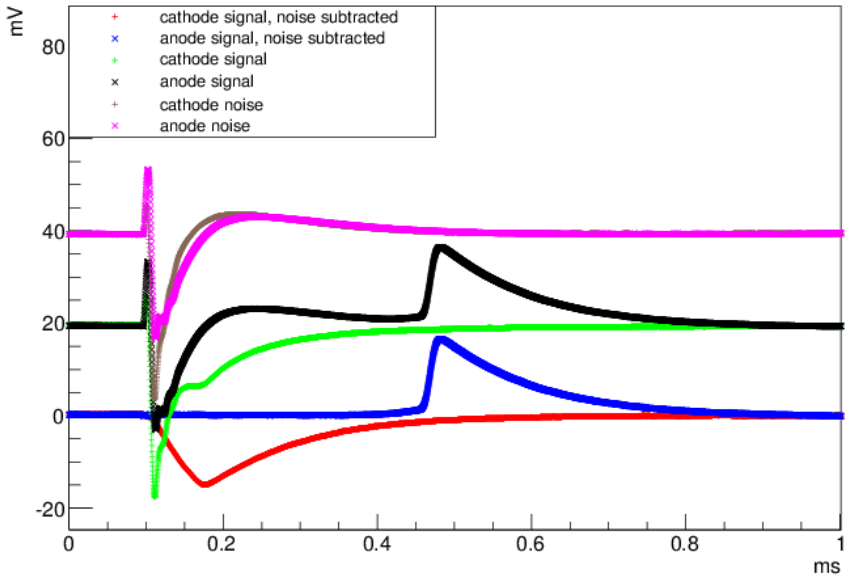
PrM 4, run 2360, 1.5 ms lifetime

Small signals resolved

- This was resolved last night, we were loading an illegal range into the digitizer (±20 mV), putting the board into a funny state, the ±20 mV was listed as valid in the SDK example for our card
- Now using ±50 mV, traces look more reasonable
- Question is if the old data is good or not, calibrate it away? Was it the HV?

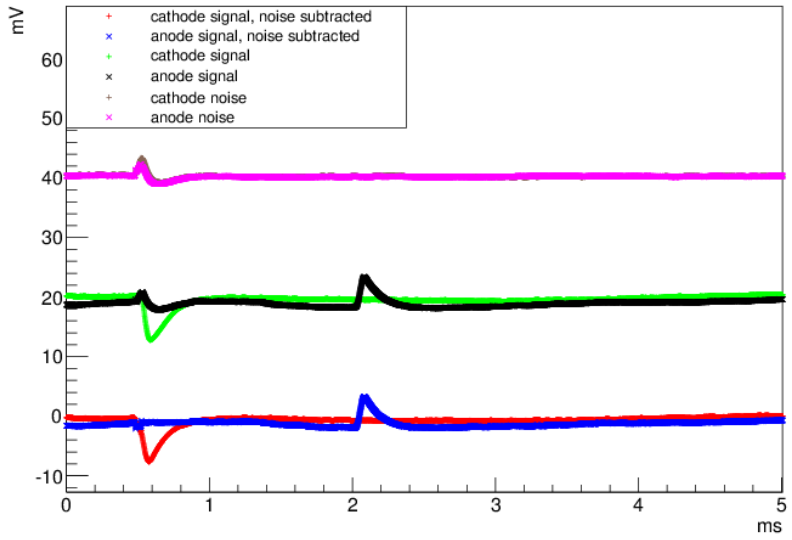


PrM 1, run 2370, 2.7 ms lifetime

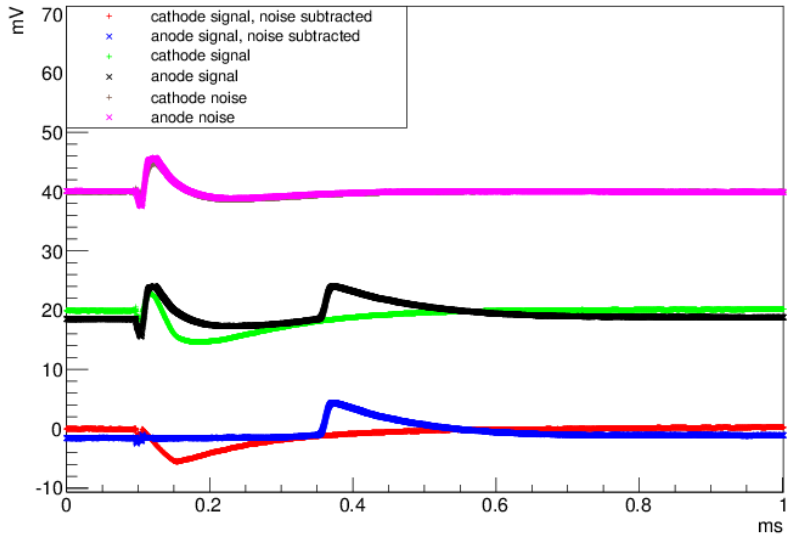


PrM 4, run 2370, 2.2 ms lifetime

Current readings

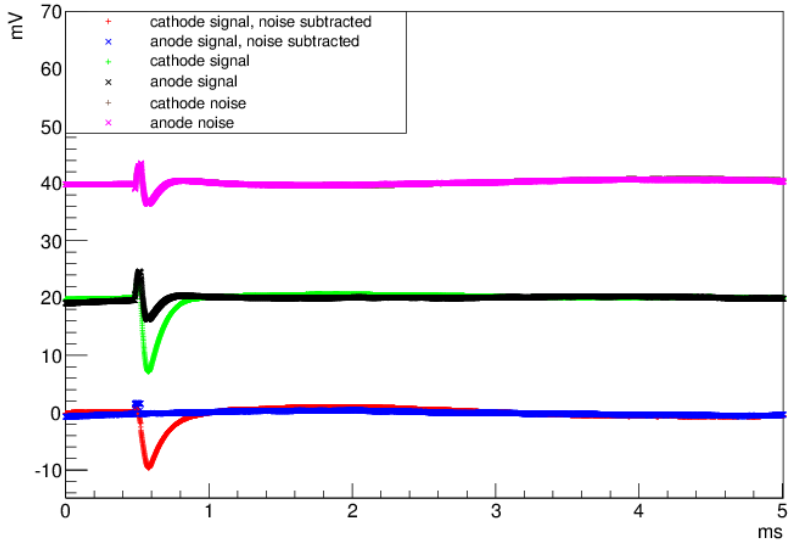


PrM 0, run 2379, 3.3 ms lifetime

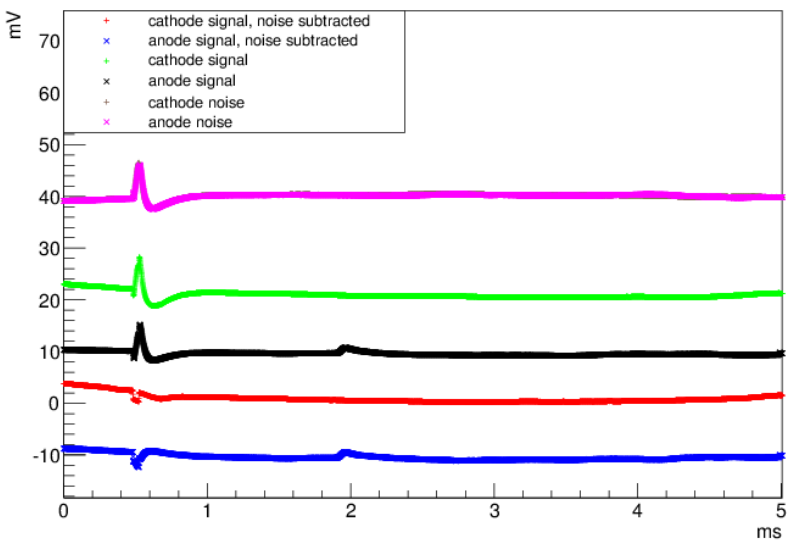


PrM 1, run 2379, 2.0 ms lifetime

Current readings



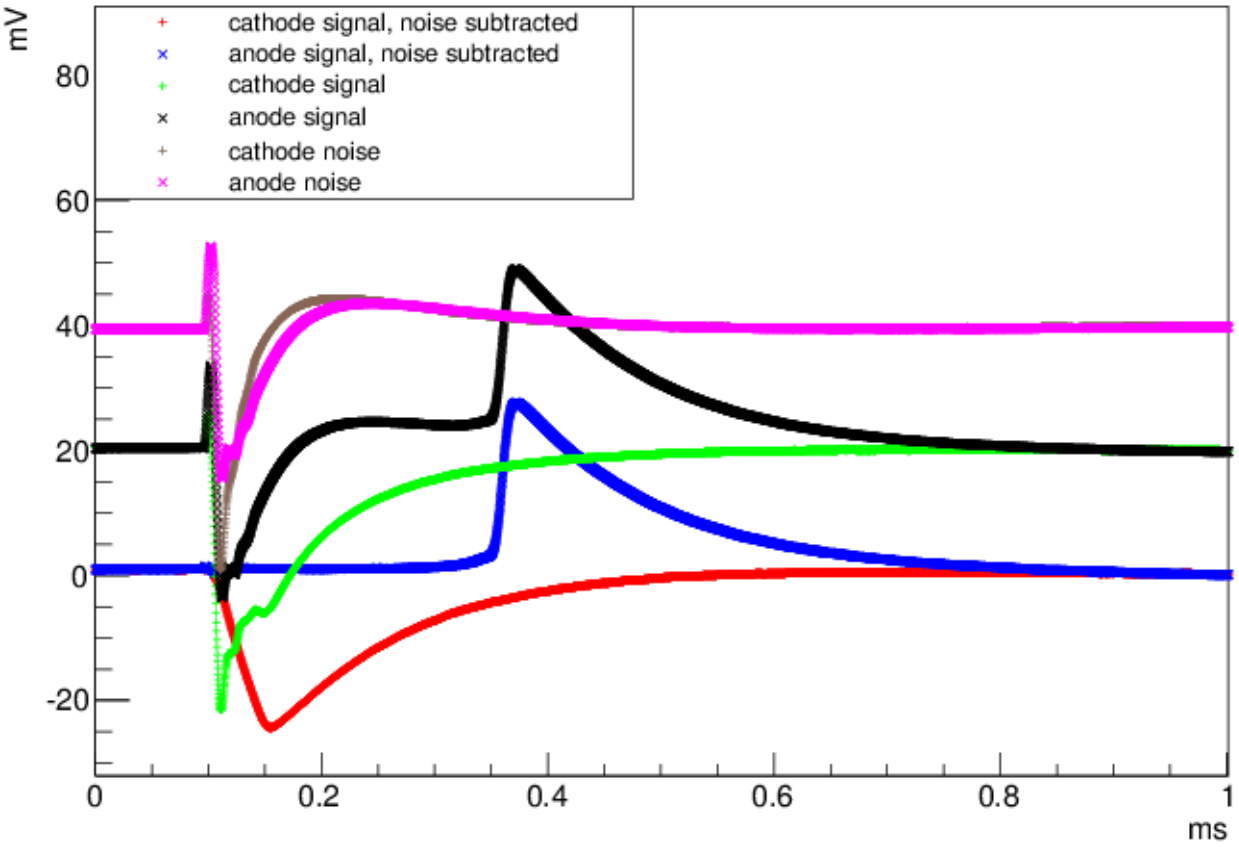
PrM 2, run 2379, 0.001 ms lifetime



PrM 3, run 2379, 0.03 ms lifetime

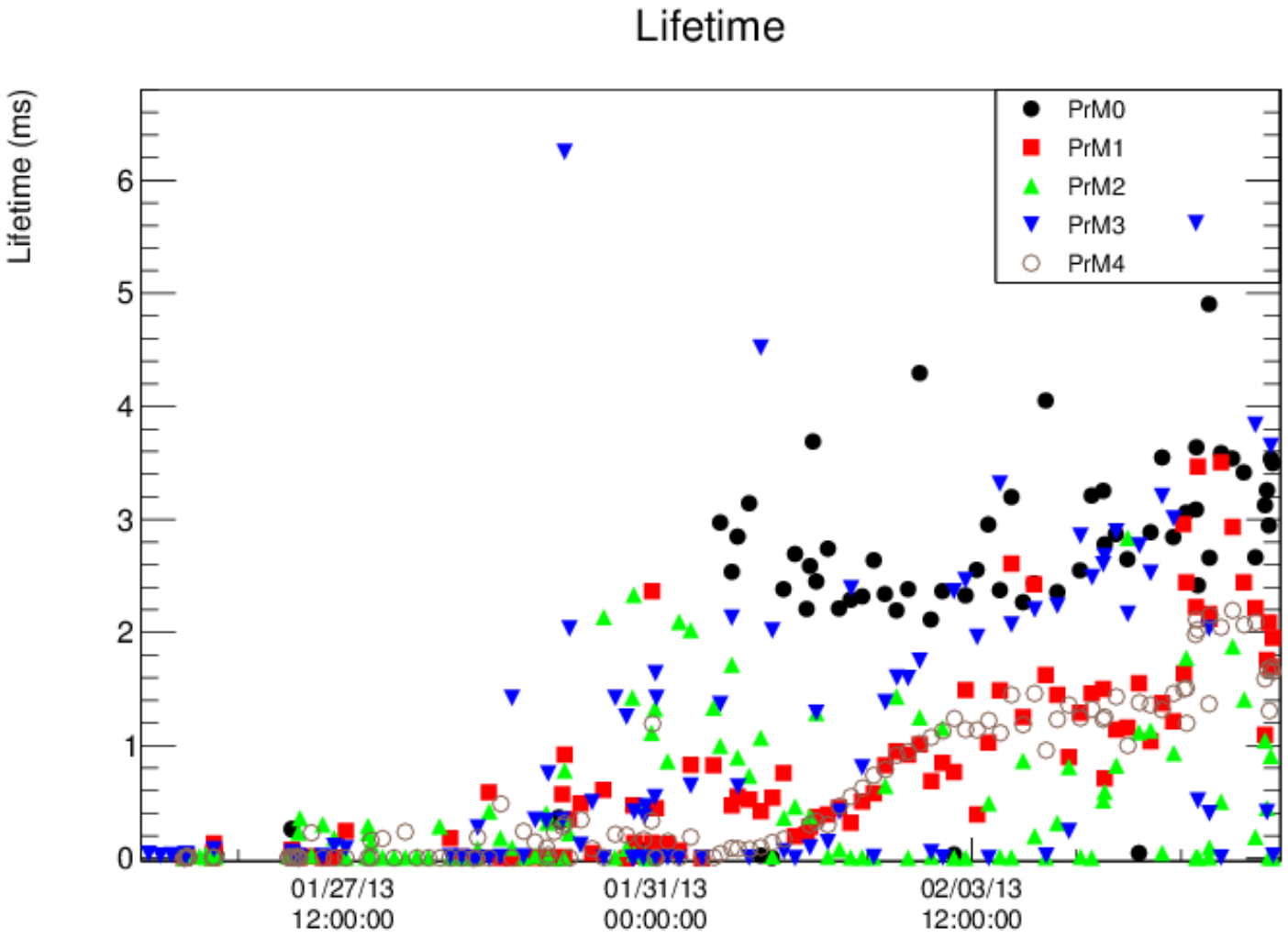
Still not seeing an anode signal for PrM 2, expect ~5 mV

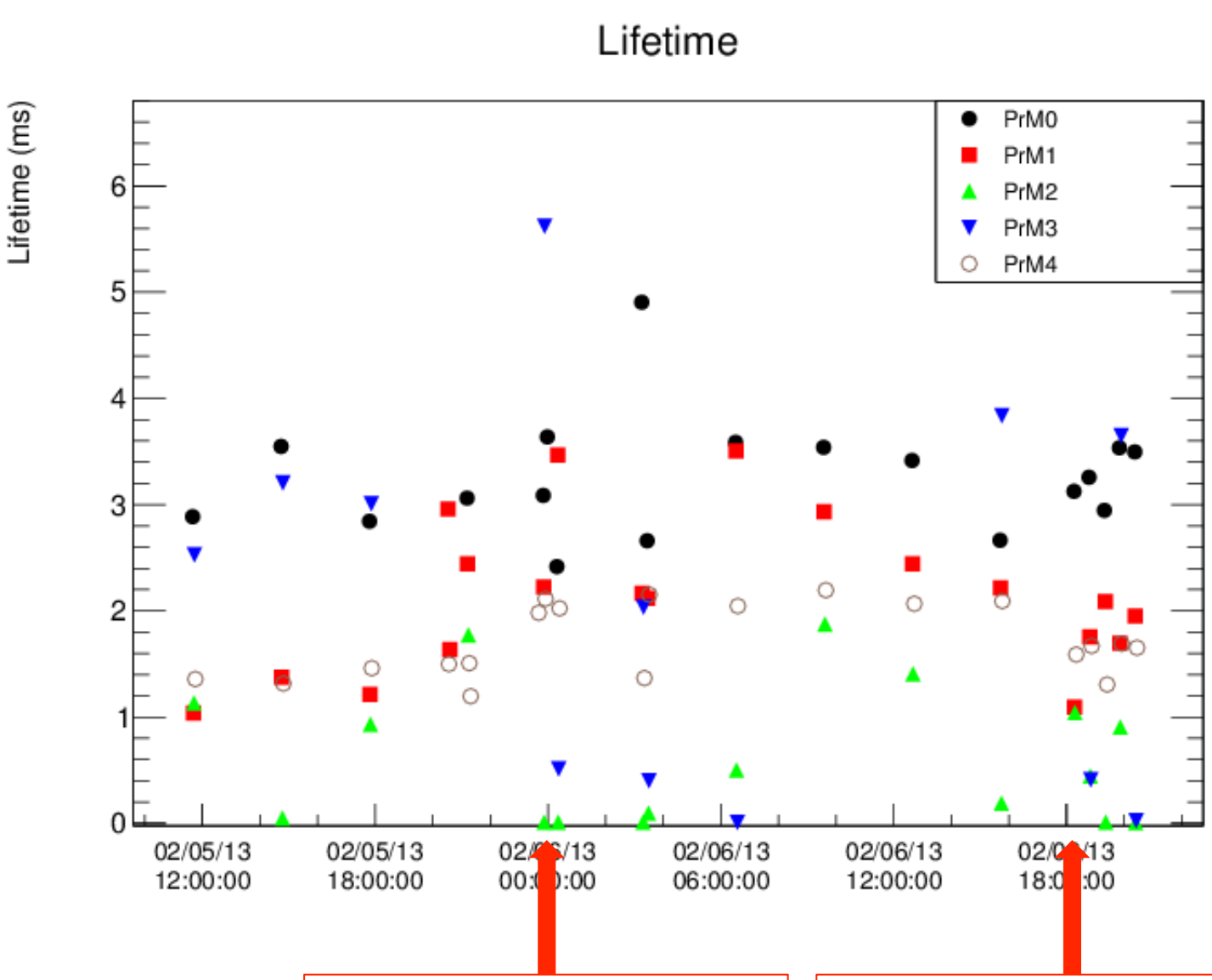
Current readings



PrM 4, run 2379, 1.7 ms lifetime

Lifetimes


Lifetime
Lifetime (ms)
0
1
2
3
4
5
6
PrM0
PrM1
PrM2
PrM3
PrM4
01/27/13
12:00:00
01/31/13
00:00:00
02/03/13
12:00:00



HV down 30%, bug fixed

HV turned back up, bug still fixed